# Introduction to Amateur Radio for the Ambulatory Care Working Group

Amateur radio is a Federal Government assigned and regulated (47 C.F.R. Part 97) communications service which, by its unique attributes, has created an enormous pool of private individuals knowledgeable about and interested in personal wireless communications and which, in times of war and conflict, local, regional or national emergency, can be quickly mobilized to provide emergency communications to supplement government and commercial services. Amateur Radio exists and is supported in all nations of the world. Each operator, in order to receive their government issued license must pass a technical examination.

Amateur Radio Operators are individuals who, by virtue of passing a technical examination in communications, and communications law, are licensed by their respective governments worldwide to operate privately-owned radio stations. They are issued unique call letters and, depending on their earned license class, can communicate using all modes, such as via radio, Morse Code, voice, television, teletype, and digital modes. They are called 'amateurs' since they are prohibited by federal laws from accepting any payment or gratuity for services that may be provided. Since all countries in the world currently license citizens that qualify, this system has created millions of trained and experienced communicators who are available to provide additional instant communications in the event of local, regional or national emergency situations that may preempt, overload or bring down commercial communication services, such as telephones, television, radio and e-mail.

## Total Costs

Option 1: Handheld $324 maximum Option 2: Base Station $644 maximum

## Benefits/Drawbacks

### Equipment

*Handheld Radio:* Inexpensive but limited power, range and usage time on battery

*Mobile (base station):* higher power, more reliable range, electrically run with batter backup for substantially longer timeframe

### Programmatic

- ❑ Extremely reliable backup communications system when traditional systems are unavailable.
- ❑ Existing network of use and medical communications support.
- ❑ All hospitals and local EOCs using amateur radio as a redundant communications tool.
- ❑ Likelihood of use rests in scenarios where all other communications systems are unavailable.
- ❑ Incorporation of communication protocols for ambulatory care providers is limited locally.

## Amateur Radio Costs of Usage and Equipment

| | Est. Cost |
|---|---|
| **USAGE FEES** | |
| License Fee (Technician class – basic level) | $14 |
| Study Course | $0 - $100 |
| | $14-$114 |
| **EQUIPMENT** | |
| *Handheld Radio* | |
| Radio Unit | $140 |
| Batteries (Replace every two years) | $70 |
| | $210 |
| *Mobile (base station)* | |
| 2 meter transceiver | $200 |
| Power Supply | $100 |
| Antenna | $50 |
| 50' Coaxial Cable | $50 |
| 12 volt battery | $70 |
| Battery case | $10 |
| Battery charger | $50 |
| | $530 |

Option 1: Handheld $324 maximum / Option 2: Base Station $644 maximum

# Benefits & Limitations of Communications Technology for the Ambulatory Care Workgroup – 4/06

| Equipment | Benefits | Limitations |
|---|---|---|
| *Landline Telephone* | Generally, highly reliable.<br><br>Does not require special licensing or training.<br><br>Widely used.<br><br>Can allow multiple users at one time (conference calling).<br><br>Good for transferring simple information requiring low precision.<br><br>Good for confidential information transfer. | Digital dependent on electricity.<br><br>All phone lines can become overwhelmed during emergencies.<br><br>Information transfer requiring high precision or long lists can become tedious.<br><br>Technology easily destroyed or damaged during physical events.<br><br>Difficult to prioritize calls and allow for "break through." |
| *Cellular Phones* | Simple to operate, requiring not specialized training or licensing.<br><br>Lightweight and mobile.<br><br>Good for transferring simple information requiring low precision.<br><br>Good for confidential information transfer. | Reliant on a complex central switching and control system that is subject to failure and overloading.<br><br>Can become overwhelmed during emergencies.<br><br>Information transfer requiring high precision or long lists can become tedious.<br><br>Control system vulnerable to destruction or damage during physical events.<br><br>Difficult to prioritize calls and allow for "break through." |
| *Email* | Excellent for high-precision or complex communications.<br><br>Broadcast capability.<br><br>High confidentiality available.<br><br>Widely used and available.<br><br>Easy to use. | Reliant on electricity. |

| Equipment | Benefits | Limitations |
|---|---|---|
| *Fax* | Typically use analog phone lines which serve as voice backup when electricity is unavailable.<br><br>Allows for transfer of high-precision, lengthy and complex information.<br><br>Widely in use.<br><br>Easy to use and requires no special licensing or training.<br><br>Allows for broadcast communications. | Reliant on electricity. |
| *Two-way Voice Radio (including Amateur Radio)* | Self-contained system offering highly reliable communications when electrically &/or network bound systems fail.<br><br>Allows for broadcast communications.<br><br>Redundant system in use by major partners in King County. (Hospitals, EOCs, etc…)<br><br>Easy to operate. | Limited security of communications – no confidential transmission.<br><br>Initial investment costs.<br><br>Limited current programmatic development.<br><br>Requires licensure. |
| *Text Messaging* | Good for broadcast messages pointing to other sources of information.<br><br>More reliable than cellular and landline systems.<br><br>End user not limited by electricity.<br><br>Easy to operate, requires no special training or licensure.<br><br>Widely in use. | Limited length of messages.<br><br>Control system vulnerable to destruction or damage during physical events. |